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ZOOLOGY.

New California Fishes.—PERKINSIA (genus nov.,) CLUPEIDÆ. Type: *Perkinsia othonops.*—Like Etrumeus, except that the pectoral and ventral fins are shielded, the scales of the breast adherent forming a ventral buckler, which covers the closed pectoral fins, leaving only the dorsal edge and the extreme tip of the fins visible. The closed ventral fins likewise slip under a posterior buckler. The capillary scales are large, that of the pectoral extending very nearly to its tip, while the ventral axillary scale reaches slightly farther than its fin. Caudal deeply forked, the lateral scales extending continuously upon the center of the fin almost to margin of central rays. Adipose eyelid covering the eye wholly, without a pupillary slit.

Perkinsia othonops; one specimen, 320 mm. long. The single specimen known was caught November 20th, 1890, off Point Loma, by fishermen taking mackerel. It belongs to the British Museum.

Form of *Clupea sagax,* or of a mackerel with a stout tail.

Head 4 ($4\frac{4}{5}$); depth 5 (6); D. 17; A. 10; P. 15; V. 8.; Scales 50.

Head compressed forward, eye longer than snout, 3 in head. Interorbital a little less than snout, 4½ in head, the frontals narrowing forward. Occiput with ridges forming a W, the top of the head with a long, lanceolate depressed area anteriorly, with a median ridge, and a triangular area between anterior part of the W. This region filled with adipose tissue in life. Maxillary 3 in head, not reaching the pupil, the supplemental bone very narrow, the maxillary sublinear, deeply ground. Cheeks opercle, preopercle, lateral portions of occiput and an enlarged humeral scale with multifurcate mucous canals, which, especially upon the cheeks, form conspicuous dendritic markings, the canals being unpigmented against closely dotted interspaces.

Isthmus triangular, the gill covers not emarginate below. Scales large, deciduous. Teeth as in Etrumeus. Pseudobranchia large, exposed. Gill rakers long and slender. Form of dorsal fin similar to that of *Clupea sagax.* The insertion of the fin equidistant between tip of snout and end of the anal. Anal small. Caudal with minute scales. Ventrals entirely posterior to the dorsal fin, short, 3½ in the head. Pectoral fins placed very low, $1\frac{3}{5}$ in head.

Silvery below, steel-blue above, checks golden. Dorsal and caudal fins dusky. Ventral fins with a median blackisk blotch anteriorly. Inner surface of pectoral fins chiefly black, the ends of the posterior rays hyaline. Adipose eyelid transparent in life, preorbital regions translucent; the adipose tissue becoming opaque in spirits.

SEBASTODES GILLII, sp. nov.

Types: Two specimens, 555 and 580 mm. long, taken off Point Loma, November 19th, 1890. Collection of the British Museum.

Related to *S. cos*, *chlorostictus*, and *rhodochloris*.

Head, 3 (3½ to lip of caudal); depth, 3 (3½); D. XIII., 13½; A. III., 7½. Lateral line (pores), 44–45.

Lower jaw projecting and entering the profile without symphyseal knob. Profile nearly straight to origin of dorsal fin, not steep. Snout very broad, blunt. Maxillary reaching posterior edge of pupil, 2 in the head. Mouth very oblique, the premaxillary on a level with superior edge of the pupil. Orbit 1 in snout, 4⅓–4½, in head, a little greater than interorbital. Interorbital concave.

Pre-, supra-, and postocular, occipital, and nuchal spines sharp; the first four very short and broad, the supraocular spine about 2½ in the interorbital. Occipital spines very high and stout; the nuchal spines almost continuous with the occipital.

Opercular and preopercular spines long and strong, the 3 superior preopercular conical, directed backward, the other 2 flat, triangular, downward and backward. Preorbital with a sharp, subconical anterior spine, and terminating posteriorly in a similar but larger spine. Maxillary with a few scales superiorly on its median third. Snout either naked or with a few scattered patches of scales. Mandible naked.

Scales strongly ctenoid; accessory scales very numerous everywhere, especially so on cheeks. Membranes of soft dorsal, and anal with minute scales on basal half of fins. A few scales basally on spinous dorsal.

Vomerine teeth in a V-shaped patch; palatine teeth in short ovate patches. Gill rakers very short, ¼–⅕. Orbital diameter, 9+17–18.

Spinous dorsal low, the highest spine 2⅖–2½ in head; the fin deeply notched, the highest ray about equal to highest spine.

Caudal truncate. Second anal stouter and about as long as third.

Buccal and opercular cavities and peritoneum white, sparsely dotted with black.

Ventral surface light geranium red, shading into scarlet on the tail. Dorsal surface rather closely covered with small bronze, roundish spots, which extend upon the membrane of soft dorsal fins and a few on the first dorsal. Series of confluent bronze spots form radiating streaks or bands on sides of head; one extends from eye to upper angle of gill-opening, one to tip of lower opercular spine which is continued upon the shoulder as a conspicuous blotch, one to lower angle of opercle, one downward and slightly backward across cheeks ; lower lip and anterior part of maxillary dusky. A few conspicuous spots on base of pectoral.

All the dark markings becoming blackish and persisting in spirits, the radiating streaks of the head especially conspicuous in the alcoholic specimen. A light spot under last dorsal spine ; one on opercular flap.

S. cos.	*S. gilli.*
Mandible, maxillary, and snout, except a median triangular spot, scaly.	Mandible entirely naked ; maxillary with a few scales medially.
Preorbital with a single, flat, downward-directed spine at its posterior angle.	Preorbital with an anterior and a posterior spine.
Interorbital deeply concave, grooved medially.	Interorbital nearly evenly concave, the median groove shallow.
Second preopercular spine directed downward.	Upper three preopercular spines directed backward.
Second anal spine 2⅔ in head.	Second anal spine 3½ in head.
	Peritoneum nearly white.
Color-markings having a washed or faded appearance.	Color-markings conspicuous.
A prominent symphyseal knob.	No symphyseal knob.
Intermaxillary band of teeth very deep in front, 3 in orbit, projecting beyond the mandible.	Intermaxillary band of teeth shallow in front, 5 in orbit, the lower jaw projecting.
Scales of head strongly ciliate, with upturned edges, the breast scales similar.	Scales of head slightly ciliate, depressed.
Palatine band of teeth long, 1⅓ in orbit.	Palatine band of teeth short, 4 in orbit.

GERRES CINEREUS, var. nov.—One specimen, 185 mm. San Diego, California, summer of 1890. Probably taken in the bay. The single specimen collected for us by Mr. Medina, at San Diego, is intermediate between *G. californiensis* and *G. cinereus*.

The caudal fin is slightly longer than the head, while the second anal spine is short, about 3½ in the head.

Ventral fins 1½ in head. Dark punctulations everywhere, except on the ventral surface. No dark lateral bars. Upper portion of spinous dorsal fin blackish. All the fins finely punctate, the pectorals least so. A dark-blue axillary spot.

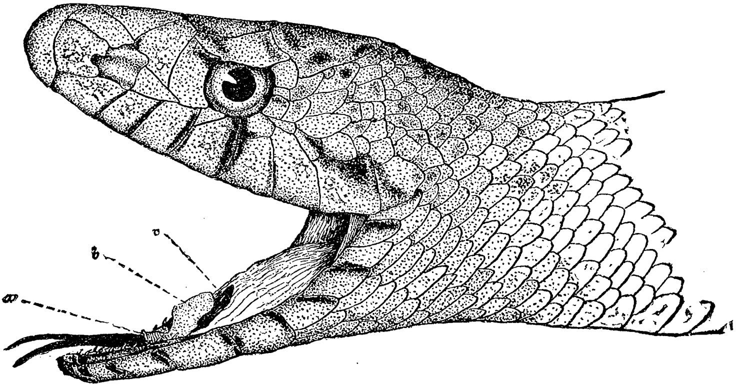
Head, 3⅖ ; depth, 2⅔ ; scales 6–45–10.

Eye equal to interorbital space, 5 in head. Maxillary just reaching front of eye. Predorsal distance 2½ in the length.

SCOMBRESOX BREVIROSTRIS Peters.—One specimen of this rare species was also collected for us by Mr. Medina in the vicinity of San Diego.

ALOPIAS VULPES (Gmel.).—This shark is also to be added to the fauna of San Diego.—R. S. EIGENMANN, *San Francisco, Cal., Jan. 8th, 1891.*

The Epiglottis in Colubrine Snakes.—In the AMERICAN NATURALIST for January, 1884 (p. 19), Dr. Chas. A. White describes the epiglottis of the pine-snakes (Pityophis), and figures it as it appears in the *P. sayi bellona* B. and G. He shows that instead of having the horizontal form found in the higher Vertebrata, it is a vertical lamina standing erect in front of the *rima glottidis.* He states that he has found it in all of the species of Pityophis, but that it is wanting in all other serpents which he has examined. As Dr. White does not specify which these species are, I have made an examination of many genera found in all parts of the world, with the view of ascertaining its presence in any of them other than in Pityophis.



Pityophis sayi bellona, B and G, natural size; *a*, sheath of tongue; *b*, epiglottis; *c*, glottis. From Dr. Shufelot.

The result of my examinations is that it is either distinctly present or absent, and that no intermediate conditions occur. In a few instances an insignificant tubercle occupies its position and represents it as remarked by Dr. White, but this scarcely assumes the importance of a rudiment. I have found it well developed in the four species of Pityophis, and in the two Mexcan snakes which I have enumerated under Spilotes: the *S. deppei* D. and B., and the *S. lineaticollis* Cope

(Bulletin U. S. Nat. Museum, 32, 1887, p. 72). It is, however, wanting in Spilotes proper, and curiously enough in the *Rhinechis elegans*, which is otherwise a good deal like Pityophis. It is not present in any other American snakes, harmless or venomous. It appears to me to be a character of generic importance, so I propose to separate the two Mexican snakes referred to from Spilotes on account of its presence under the name of Epiglottophis, with *E. deppei* as the type.

Among old-world snakes it is wanting in all types, both venomous and harmless. The rudiment in the form of a small tubercle is present in the *Spilotes helenae*, *S. melanurus* and *S. samarensis*; also in the *Rhinechis scalaris*.—E. D. Cope.

Notes on the Classification of the Pigeons.—Quite recently the writer has very thoroughly compared the characters presented on the part of the skeletons of specimens of nearly all the genera of the United States Columbidæ. There appears to be a difference of opinion as to how these birds should be classified. Coues, in his "Key" (second edition), states it as his opinion that "the order Columbæ may be separated into three groups or suborders: Didi, Pterocletes, and Peristeræ,—the first two certainly, the last probably, of a single family. The Peristeræ alone are American. These he divides in the following way:

Suborder.	Family.	Subfamilies.
PERISTERÆ.	Columbidæ.	1. Columbinæ. 2. Zenaidinæ. 3. Starnœnadinæ.

In the Columbinæ he includes the genera Columba and Ectopistes; in the Zenaidinæ, the genera Engyptila, Zenaidura, Zenaida, Melopelia, Columbigallina, Scardafella, and Geotrygon; and finally, in the Starnœnadinæ, the genus Starnœnas.

The American Ornithologists' Union, in its official check-list, presents the order Columbæ to contain the family Columbidæ, and creates no subfamilies for the genera just named above.

Mr. Ridgway, in his "Manual," adopts the same scheme of classification.

Coues primarily bases his division of the Columbidæ into subfamilies upon the following characters:

Tarsi scutellate, feathered	Columbinæ.
Tarsi scutellate, naked	Zenaidinæ.
Tarsi reticulate, naked	Starnœnadinæ.

The remaining characters, in so far as we have any knowledge of them at present, except in the case of the Starnœnadinæ, do not go to support this division, and it breaks down utterly when we come to take into consideration the osteology of the various species.

The skeleton of Geotrygon has not been examined by me; but I am of the opinion that it will not militate against the classification suggested below, judging as I do from its external anatomy.

My studies of the osteology of the group convince me that our United States pigeons naturally make a very good suborder, containing the family Columbidæ. Now, if we take the characters presented on the part of the skeleton of such a species as *Ectopistes migratorius*, we find that they are essentially repeated by all the other genera save Starnœnas. When we come to osteologically compare Starnœnas we find that it differs very materially and in a number of points, as in the general pattern of its sternum, the number and arrangement of its vertebræ and ribs, some of its cranial characters, and in the characters of its pelvic limbs.

From osteological premises, then, our family Columbidæ divides naturally into two subfamilies: the Columbinæ, containing the genera Columba, Ectopistes, Engyptila, Zenaidura, Zenaida, Melopelia, Columbigallina, Scardafella, and Geotrygon; and the subfamily Starnœnadinæ, containing the genus Starnœnas.

In another connection it is my intention to present these osteological characters of the Columbidæ in detail.—R. W. SHUFELDT, *Smithsonian Institution, January 22d, 1891.*

Description of Two New Species of Rodents from Mexico.—While recently classifying and arranging the collections of mammals belonging to the Natural History Section of the Comision Geografica-Exploradora of Mexico, I found two species apparently new, whose characters I now give:

SPERMOPHILUS SONORIENSIS, sp. nov.—Apparently quite similar to Dr. Merriam's recently described *S. cryptospilotus*, which I know only from the description. Above, head and body fawn color, with no indications of spots. Individual hairs with extreme bases black, followed by a narrow ring of straw-yellow, subterminally broadly ringed with walnut-brown (which color occupies more than twice the space covered by the two preceding colors), and tipped with cream-buff. Something like one per cent. of the hairs have the walnut-brown replaced by black; but these are so relatively few in number as not to sensibly affect the general tone. Color gradually shading lighter to sides, where it meets, in a sharp line, the white of under parts. A bar of decidedly lighter fawn color, 3 mm. in width, commencing a little back of the nose, passes between the darker shade of the crown and a superorbital white area, terminating at the ear.

The upper border of the white of under parts is defined by a line drawn from the nostrils, passing over the eyes and through centers of ear openings, across shoulders and along sides of body to the groins. The white area also includes the inner surfaces of legs and dorsal surfaces of hind feet, which latter are slightly washed with rufous. Hairs of under parts entirely white, but so thin in the specimen before me that the color of the skin shows through, giving a plumbeous cast to most of this surface.

Outer surface of fore limb, from elbow to bases of toes, white, more or less washed with rufous. Outer surfaces of hind legs concolor with dorsum.

First third of upper surface of tail the same as back; thence the center is fawn color, bordered by a black zone that, in turn, is bordered by a whitish rufous. On its under surface the black line is scarcely perceptible, the whole of this surface being pale rufous.

Ears, in dried skin, a mere rim.

Lower surfaces of pes densely haired; of manus, naked.

Claws medium sized, black, with white tips; of thumb, as well developed as in *S. mexicanus*.

Mystacial hairs mostly black; a few white ones interspersed.

Measurements of dried skin, in millimeters: Total length, 220; head and body, 155; tail vertebræ, 65; hairs beyond vertebræ, 20; hind foot, 33; fore foot, 21; longest mystacial hairs, 32.

Measurements of skull: Length from point of nasals to upper edge of foramen magnum, 38; greatest width at auditory bullæ, 18; least interorbital width, 9; length of molar series, 8.5; transverse diameter of first premolar, 1.25; the same of second, 2; of first molar, 2.5.

The zygomæ and hinder edge of palate are broken, so as to allow of no measurements being taken from them.

The only noticeable differences between this skull and that of *S. cryptospilotus* (*vide North American Fauna*, No. 3, Pl. IX., Figs. 1, 2, and 3) is that in this the hamular processes of the pterygoids abut against the auditory bullæ posterior to the suture of the basisphenoidum with the basioccipitale, instead of in front of it, as in *cryptospilotus;* and in that the transverse diameter of the first premolar is fully equal to its longitudinal diameter.

Type: No. 517 ♂ ad., Museum of the Comision Geografica-Exploradora de México. Taken by Zenòn Córdova, at Hermosillo, Sonora, November, 1887.

This species belongs to the Spilosoma group, and in all probability finds its closest affinity in *S. cryptospilotus,* from which it appears separable by some slight differences in size, color, and the cranial characters noted.

NEOTOMA TORQUATA, sp. nov.—Above, head and body light Vandyke-brown, washed with black; more intensely in the mesaldorsal line, insensibly becoming entirely obliterated before reaching the white of lower parts. Hairs of all parts, except ears, feet, tail, and a small patch on chin, slate-gray for the greater part of their length. Above ringed for about 3 mm. with Vandyke-brown, followed by a slight tipping of black. In the dorsal line are interspersed longer hairs nearly or completely lacking the rufous ringing, whose place being occupied by the greater extension of the black tips, gives to this part its darker tone, which may be described as hair-brown. Belly nearly pure white, slightly tinged with yellow, and in parts soiled by the slate-gray of roots showing through the white tips of hairs. Breast occupied by a well-defined collar, 20 mm. in width, of same color as sides of body. Under surface of neck grayish-white, gradually shading forward to slate-gray to form an ill-defined band, about 4 mm. in width, that covers the upper lips, excepting a narrow line of white encircling the mouth parts. A small, circular area on chin of pure white, including roots of hairs. Upper third of circumference of tail clove-brown, sharply separated from the dirty white of its sides and under parts. The tail is closely covered with short, stiffish hairs, through which only upon very close scrutiny can the annuli be seen on sides and beneath. Feet white, slightly washed with drab a trifle below carpus and tarsus. Outer surfaces of legs and arms shading from Vandyke-brown above to drab below. Inner surfaces as belly. Ears seal-brown, nearly naked on posterior external surfaces, rather scantily covered with short seal-brown hairs on internal and anterior external surfaces. Mystacial hairs black for half or two-thirds of their length, terminating in white; the longest being 65 mm. Soles of fore feet entirely naked, with five warts; of hind feet, well covered with hair for posterior half, having six warts. Eyes blue-black, very large and exserted. Their diameter in the dried skin is about 8 mm.

Measurements, taken in flesh: Length from tip of nose to end of tail vertebræ, 338 mm. (13.33″); tail vertebræ, 160 (6.37″); manus, 16 (.69″); pes, 35 (1.41″); ear, 21 (.84″).

The skull shows no peculiarities of note. Length, 45; greatest width of zygomæ, 23; length of both upper and lower molar series, 9; length of inferior mandibula from arthral bead to anterior edge of alveola of incisor, 25. The skull and teeth are nearly precisely as figured by Baird for *Neotoma mexicana* (U. S. Mex. Boundary Survey, Mammals, Pl. XXIV., Figs. 1 *a* to *g*.)

Type specimen : No. 380, Museum of Comision Geografica-Exploradora; adult female, taken between Tetela del Volcan and Zacualpan Amilpas, State of Morelos, Oct. 26, 1890. Collector, H. L. Ward. Found in dark tunnel of an abandoned mine.

According to Coues (Mon. N. A. Rod.), Neotoma is a genus in which cranial and dental characters count for little or nothing (!), but in which color appears to be quite constant. We will therefore disregard the almost exact conformity of the skull and teeth of this species with those figured by Prof. Baird for *mexicana*, and will call attention only to external characters. *N. torquata* is at once distinguished from all known species of Neotoma by its collar ; also from *floridana* by the more rufous color of upper parts, and by roots of hairs of belly being gray instead of white ; from *fuscipes* and *ferruginea* by this latter distinction and the tail being bicolor, instead of unicolor ; from *cinerea* in general coloration and in not having the tail bushily haired.—HENRY L. WARD, *Tacubaya, D. F. Mex., Jan. 22, 1891.*

The Entepicondylar Bridge in Man.—M. S. Nicholas, has observed and recorded (*Revue Biologique du Nord de la, France*, 1891, p. 121), six cases of the presence of a rudiment of the superior part of the entepicondylar bridge of the humerus in man. They all occurred in insane persons who died in the Asylum of Maréville. This anomaly is interesting as constituting a lemuroid reversion. Struthers has observed this anomaly in 2 p. c. of skeletons he has examined, and Gruber in 2.7 p. c. Testut gives 1 p. c. as the proportion of cases, which Nicholas thinks is the most probably correct figure.